

#3 0280
02/09/01
OPIPE

RAW SEQUENCE LISTING DATE: 02/09/2001
PATENT APPLICATION: US/09/772,105 TIME: 11:06:59

Input Set : A:\SEQ LIST 0838.1001-009.txt
Output Set: N:\CRF3\02092001\I772105.raw

3 <110> APPLICANT: Ozelius, Laurie J.
4 Breakfield, Xandra O.
6 <120> TITLE OF INVENTION: TORSIN, TORSIN-RELATED GENES, AND
7 METHODS OF DETECTING NEURONAL DISEASES
9 <130> FILE REFERENCE: 0838.1001009
C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/772,105
C--> 12 <141> CURRENT FILING DATE: 2001-01-26
14 <150> PRIOR APPLICATION NUMBER: US 09/218,363
15 <151> PRIOR FILING DATE: 1998-12-22
17 <150> PRIOR APPLICATION NUMBER: US 09/099,454
18 <151> PRIOR FILING DATE: 1998-06-18
20 <150> PRIOR APPLICATION NUMBER: US 60/050,244
21 <151> PRIOR FILING DATE: 1997-06-19
23 <160> NUMBER OF SEQ ID NOS: 90
25 <170> SOFTWARE: FastSEQ for Windows Version 4.0
27 <210> SEQ ID NO: 1
28 <211> LENGTH: 2597
29 <212> TYPE: DNA
30 <213> ORGANISM: Homo sapien
32 <220> FEATURE:
33 <221> NAME/KEY: CDS
34 <222> LOCATION: (568)...(1563)
36 <221> NAME/KEY: misc_feature /
37 <222> LOCATION: (1)...(2597)
38 <223> OTHER INFORMATION: n = A, T, C or G
40 <400> SEQUENCE: 1
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W--> 42 tcttgctctg tctcccaaggc tggagntgca gtggtagat ctcggctcac tgcaatctcc 120
W--> 43 gcctcctggg ttcaagngca gttgtcatg tgcacgcctc cccagtagct agggctacag 180
44 gtgcctacca ccacacccgc taattttata ttttttagtag agacgtgggt tcaccatgtt 240
W--> 45 ggtcaggctg gtctcgaaact cctgacactca ggtgtatccgc ccnccctcagec ctncccaaag 300
W--> 46 ggctgggatt acaggccagg gccaccatnc ctggaaaaaa taacgtccat aaacaaaaac 360
W--> 47 acgtggccaa cagggcggag cagaaccggc ttccggaaag caaaacagggg ctttgttaccg 420
48 aacaaagatg gccggcccgcc gctgtggggag gagggtcgcc ctgaagaaag atggcctccg 480
W--> 49 cgagaggagg aancccgaag cgtgggtctg gcggtgcac cggttcgccg tcggcgccgag 540
50 aacaagcagg gtggcgcggg tccgggc atg aag ctg ggc cgg gcc qtg ctg ggc 594
Met Lys Leu Gly Arg Ala Val Leu Gly
51 1 5
52
54 ctg ctg ctg ggc tcc gtg gtg cag ggc gtg gag ccc atc agc 642
55 Leu Leu Leu Ala Pro Ser Val Val Gln Ala Val Glu Pro Ile Ser
56 10 15 20 25
58 ctg gga ctg gcc ctg ggc gtc ctc acc ggc tac atc lac ccg cgt 690
59 Leu Gly Leu Ala Leu Ala Gly Val Leu Thr Gly Tyr Ile Tyr Pro Arg
60 30 35 40
62 ctc tac tgc ctc ttc gcc gag tgc tgc ggg cag aag cgg agc ctt agc 738
63 Leu Tyr Cys Leu Phe Ala Glu Cys Cys Gly Gln Lys Arg Ser Leu Ser
64 45 50 55

ENTERED
See p.5

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66	cgg gag gca ctg cag aag gat ctg gac gac aac ctc ttt gga cag cat	786
67	Arg Glu Ala Leu Gln Lys Asp Leu Asp Asp Asn Leu Phe Gly Gln His	
68	60 65 70	834
70	ctt gca aag aaa atc atc tta aat gcc gtg ttt ggt ttc ata aac aac	
71	Leu Ala Lys Lys Ile Ile Leu Asn Ala Val Phe Phe Ile Asn Asn	
72	75 80 85	
74	cca aag ccc aag aaa cct ctc acg ctc tcc ctg cac ggg tgg aca ggc	882
75	Pro Lys Pro Lys Lys Pro Leu Thr Leu Ser Leu His Gly Trp Thr Gly	
76	90 95 100 105	
78	acc ggc aaa aat ttc gtc acg aag atc atc gca gag aat att tac gag	930
79	Thr Gly Lys Asn Phe Val Ser Lys Ile Ile Ala Glu Asn Ile Tyr Glu	
80	110 115 120	
82	ggt ggt ctg aac aat gac tat gtc cac ctg ttt gtg gcc aca ttg cac	978
83	Gly Gly Leu Asn Ser Asp Tyr Val His Leu Phe Val Ala Thr Leu His	
84	125 130 135	
86	ttt cca cat gct tca aac atc acc ttg tac aag gat cag tta gag ttg	1026
87	Phe Pro His Ala Ser Asn Ile Thr Leu Tyr Lys Asp Gln Leu Gln Leu	
88	140 145 150	
90	tgg att cga ggc aac gtg aat gtc ttt gtc agg tcc atc ttc ata ttt	1074
91	Trp Ile Arg Gly Asn Val Ser Ala Cys Ala Arg Ser Ile Phe Ile Phe	
92	155 160 165	
94	gat gaa atg gat aag atg cat gca ggc ctc ata gat gcc atc aag cct	1122
95	Asp Glu Met Asp Lys Met His Ala Gly Leu Ile Asp Ala Ile Lys Pro	
96	170 175 180 185	
98	ttc ctc gac tat tat qac ctg gtg gat ggg gtc tcc tac cag aaa ggc	1170
99	Phe Leu Asp Tyr Tyr Asp Leu Val Asp Gly Val Ser Tyr Gln Lys Ala	
100	190 195 200	
102	atg ttc ata ttt ctc acg aat gct gga gca gaa agg atc aca gat gtg	1218
103	Met Phe Ile Phe Leu Ser Asn Ala Gly Ala Glu Arg Ile Thr Asp Val	
104	205 210 215	
106	gct ttg gat ttc tgg agg aat gga aag cag cag gaa gac atc aag ctc	1266
107	Ala Leu Asp Phe Trp Arg Ser Gly Lys Gln Arg Glu Asp Ile Lys Leu	
108	220 225 230	
110	aaa gac att gaa cac gac ttg tct gtg tcc gtt ttc aat aac aag aac	1314
111	Lys Asp Ile Glu His Ala Leu Ser Val Ser Val Phe Asn Asn Lys Asn	
112	235 240 245	
113	agt ggc ttc tgg cac acg acg tta att gac cgg aac ctc att gat tat	1362
114	Ser Gly Phe Trp His Ser Ser Leu Ile Asp Arg Asn Leu Ile Asp Tyr	
115	250 255 260 265	
117	ttt gtt ccc ttc ctc ccc ctg gaa tac aaa cac cta aaa atg tgt atc	1410
118	Phe Val Pro Phe Leu Pro Leu Glu Tyr Lys His Leu Lys Met Cys Ile	
119	270 275 280	
121	cga gtg gaa atg cag tcc cga ggc tat gaa att gat gaa gac att gta	1458
122	Arg Val Glu Met Gln Ser Arg Gly Tyr Glu Ile Asp Glu Asp Ile Val	
123	285 290 295	
125	agc aga gtg gct gag gag atg aca ttt ttc ccc aaa gag gag aga gtt	1506
126	Ser Arg Val Ala Glu Glu Met Thr Phe Phe Pro Lys Glu Glu Arg Val	
127	300 305 310	
129	ttc tca gat aaa ggc tgc aaa acg gtg ttc acc aag tta gat tat tac	1554

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183 Ala Gly Leu Ile Asp Ala Ile Lys Pro Phe Leu Asp Tyr Tyr Asp Leu
 184 180 185 190
 185 Val Asp Gly Val Ser Tyr Gln Lys Ala Met Phe Ile Phe Leu Ser Asn
 186 195 200 205
 187 Ala Gly Ala Glu Arg Ile Thr Asp Val Ala Leu Asp Phe Trp Arg Ser
 188 210 215 220
 189 Gly Lys Gln Arg Glu Asp Ile Lys Leu Lys Asp Ile Glu His Ala Leu
 190 225 230 235 240
 191 Ser Val Ser Val Phe Asn Asn Lys Asn Ser Gly Phe Trp His Ser Ser
 192 245 250 255
 193 Leu Ile Asp Arg Asn Leu Ile Asp Tyr Phe Val Pro Phe Leu Pro Leu
 194 260 265 270
 195 Glu Tyr Lys His Leu Lys Met Cys Ile Arg Val Glu Met Gln Ser Arg
 196 275 280 285
 197 Gly Tyr Glu Ile Asp Glu Asp Ile Val Ser Arg Val Ala Glu Glu Met
 198 290 295 300
 199 Thr Phe Phe Pro Lys Glu Glu Arg Val Phe Ser Asp Lys Gly Cys Lys
 200 305 310 315 320
 201 Thr Val Phe Thr Lys Leu Asp Tyr Tyr Asp Asp
 202 325 330
 205 <210> SEQ ID NO: 3
 206 <211> LENGTH: 3568
 207 <212> TYPE: DNA
 208 <213> ORGANISM: Homo sapien
 210 <220> FEATURE:
 211 <221> NAME/KEY: CDS
 212 <222> LOCATION: (994)...(1863)
 214 <221> NAME/KEY: misc_feature
 215 <222> LOCATION: (1)...(3568)
 216 <223> OTHER INFORMATION: n = A,T,C or G
 218 <400> SEQUENCE: 3
 219 tgatccgcct gcctcgccct cccaaaatgc tgggattaca ggcgtqagcg cgcgcqcccg 60
 220 ccagccctag acatgttcgc tcttgtcgcc caggctggag tgcagtggca cgatctcgcc 120
 221 taactgcaac ctccgcctcc tgggttcaag agattctctt gctcaaccc cegagtagct 180
 W--> 222 gggattacag gcgyscgcrc csmcrscacg ctttttttttggc acagtttgc 240
 W--> 223 tcttgtcgcc aggctggagt gcagtggnng anctcggtta actgcaactc cgcctctgg 300
 W--> 224 gttcaagaga ttcttctggc tcaactcccg agtagctggg attataggng nccgnacca 360
 225 caccatctaa ttttttttat ttttagtaga gacggggttt cgcacqttga qcaggctgg 420
 226 ctgcgaactcc tgacatcagg tgatccgccc gatccagttt cccaaatgtc tgggattaca 480
 227 ggcgtqagca cggcgcccg cccaaaaaaa aatattttt tttttttttt agatattttt 540
 228 tcactcttgc tgcccaaggtt ggagtqaat gggtgtatc cggctcqcc tcccaaagt 600
 W--> 229 ctgggattac aggcttgaca cccngcccg scggaaaaaa twtttttaaa agaaaaagg 660
 230 aaacaamag tctctacac ctgcgrccac tcccaagaac gatggsacss cctctctyc 720
 W--> 231 gnccctmacc aaccatggcc gncccnnaagg gatgtggggcg ggctctgcccc gggaaagtga 780
 232 cgsacgagag gaagtcgttc ctgcgtttgg cccggggccg cctggctcag tggcttctgc 840
 233 gggcttcgag gagcgggatg ttgcgggtgg ggtggctccg ggcgcggccg cgcgtggcg 900
 234 gctgtggcg gcccggatgg tgccggagtt cggccccatc accgtggggcc tagccatcgg 960
 235 gcaggctggc catcacccggc tacctgtctt acaatgt aca tct act gcc cgt tgg 1014
 236 Met Thr Ser Thr Ala Arg Ser

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237	1	5															
239	ccg	agt	gct	gcc	ggc	gag	gag	ccg	ccg	ctc	aac	gct	tcg	gct	ctc	aag	1062
240	Pro	Ser	Ala	Ala	Gly	Glu	Glu	Arg	Pro	Leu	Asn	Ala	Ser	Ala	Leu	Lys	
241	10		15		20												1110
243	ctg	gat	ttg	gag	gag	aag	ctg	ttt	gga	cag	cat	cta	gcc	acg	gaa	gtg	
244	Leu	Asp	Leu	Glu	Glu	Lys	Leu	Phe	Gly	Gln	His	Leu	Ala	Thr	Glu	Val	
245	25		30		35												1158
247	att	ttc	aag	gcg	ctg	act	ggc	ttc	agg	aac	aac	aaa	aat	ccc	aag	aaa	
248	Ile	Phe	Lys	Ala	Leu	Thr	Gly	Phe	Arg	Asn	Asn	Lys	Asn	Pro	Lys	Lys	
249	40		45		50											55	
251	cca	ctg	acc	ctt	tcc	tta	cac	ggc	tgg	gct	ggc	aca	ggc	aag	aat	ttt	
252	Pro	Leu	Thr	Leu	Ser	Leu	His	Gly	Trp	Ala	Gly	Thr	Gly	Lys	Asn	Phe	
253			60		65											70	
255	gtc	agt	caa	att	gtg	gct	gaa	aat	ctt	cac	aaa	ggt	ctg	aag	agt		1254
256	Val	Ser	Gln	Ile	Val	Ala	Glu	Asn	Leu	His	Pro	Lys	Gly	Leu	Lys	Ser	
257			75		80											85	
259	aac	ttt	gtc	cac	ctg	ttt	gta	tgc	act	ctg	cac	ttc	cct	cat	gag	cag	1302
260	Asn	Phe	Val	His	Leu	Phe	Val	Ser	Thr	Leu	His	Phe	Pro	His	Gln		
261			90		95											100	
263	aag	ata	aaa	ctg	tac	cag	gac	cag	tta	cag	aag	tgg	atc	cgc	ggt	aat	
264	Lys	Ile	Lys	Leu	Tyr	Gln	Asp	Gln	Leu	Gln	Lys	Trp	Ile	Arg	Gly	Asn	
265			105		110											115	
267	gtg	agt	gca	tgt	gcg	aac	tct	gtt	ttc	ata	ttt	gac	gag	atg	gat	aaa	1398
268	Val	Ser	Ala	Cys	Ala	Asn	Ser	Val	Phe	Ile	Phe	Asp	Glu	Met	Asp	Lys	
269	120		125		130											135	
271	ttg	cac	ccc	ggg	att	gac	gca	atc	aag	ccg	tgg	ttt	cta	gac	tac	tac	
272	Leu	His	Pro	Gly	Ile	Ile	Asp	Ala	Ile	Lys	Pro	Phe	Leu	Asp	Tyr	Tyr	
273			140		145											150	
275	gag	cag	gtt	gac	gga	gtg	tct	tac	cgc	aaa	gcc	atc	ttc	atc	ttt	ctc	1494
276	Glu	Gln	Val	Asp	Gly	Val	Ser	Tyr	Arg	Lys	Ala	Ile	Phe	Ile	Phe	Leu	
277			155		160											165	
279	agc	aat	gca	ggc	ggg	gac	ctt	ata	act	aag	acg	gct	ctt	gac	tgg		1542
280	Ser	Asn	Ala	Gly	Gly	Asp	Leu	Ile	Thr	Lys	Thr	Ala	Leu	Asp	Phe	Trp	
281			170		175											180	
283	cgg	gcc	gga	aga	aag	agg	gaa	gac	att	cag	ctg	aag	gac	ctg	gaa	cct	1590
284	Arg	Ala	Gly	Arg	Lys	Arg	Glu	Asp	Ile	Gln	Ieu	Lys	Asp	Leu	Glu	Pro	
285			185		190											195	
287	gta	ctg	tct	gtc	ggg	gtc	ttc	aat	aat	aaa	cac	agt	ggc	ctg	tgg	cac	1638
288	Val	Leu	Ser	Val	Gly	Val	Phe	Asn	Asn	Lys	His	Ser	Gly	Leu	Trp	His	
289	200		205		210											215	
291	agt	gga	cgt	atc	gac	aaa	aac	ctc	att	gat	tac	ttt	atc	ccc	ttc	ctg	
292	Ser	Gly	Leu	Ile	Asp	Lys	Asn	Ile	Asp	Tyr	Phe	Ile	Pro	Phe	Leu		
293			220		225											230	
295	cct	ttg	gag	tac	aga	cat	gtg	aaa	atg	tgt	gtg	agg	gcc	gag	atg	agg	1734
296	Pro	Leu	Glu	Tyr	Arg	His	Val	Lys	Met	Cys	Val	Arg	Ala	Glu	Met	Arg	
297			235		240											245	
299	gcc	cgt	gtt	tct	gcc	ata	gat	gaa	gac	att	gtc	aca	aga	gtg	gca	gag	1782
300	Ala	Arg	Gly	Ser	Ala	Ile	Asp	Glu	Asp	Ile	Val	Thr	Arg	Val	Ala	Glu	
301			250		255											260	

Please Note:
 Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

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Input Set : A:\SEQ LIST 0838.1001-009.txt
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L:11 M:270 C: Current Application Number differs, Replaced Current Application Number
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:41 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:42 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:43 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:45 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:46 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:49 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:222 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:223 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:224 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:229 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:231 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:779 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:907 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:923 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:1056 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:1151 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1466 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48
L:1484 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49
L:1486 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49
L:1502 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50
L:1503 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50
L:1505 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50
L:1506 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50
L:1507 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50
L:1525 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:1526 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:1527 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:1528 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:1529 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:1566 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:53
L:1568 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:53
L:1603 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:55
L:1604 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:55
L:1621 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:56
L:1622 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:56
L:1659 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:57
L:1675 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58
L:1676 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58
L:1678 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58
L:1696 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59
L:1735 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61
L:1736 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61
L:1751 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:62
L:1753 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:62
L:1755 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:62
L:1756 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:62

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L:1775 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:63
L:1807 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:65
L:1827 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:66
L:2082 M:341 W: (46) "n" or "xaa" used, for SEQ ID#:88